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THE INDICATIONS AND MODES OF DRAINAGE AFTER ABDOMINAL AND VAGINAL SECTION.*

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So many names of distinguished gynæcologists appear on the programme to participate in this discussion that I have deemed it wise to curtail my remarks as much as possible, and, instead of going over the enormous literature on the subject, I will give you the simple rules in reference to drainage which I follow in performing abdominal operations.

Drainage of the abdominal cavity is an expression of the present imperfect state of surgery. It is often an unavoidable evil. It should be limited to appropriate cases, and it is therefore well that the indications for it should be laid down clearly, so that we may have eventually some definite rules that will guide the surgeon in his abdominal work. There are now no fixed rules. Some surgeons avoid drainage wherever possible; others drain as a rule. If I were permitted to pass my judgment on this question as a whole, I would say that the surgeon who has the ambition to operate quickly, to make an impression on the bystanders, should drain frequently; while, on the other hand, the surgeon who proceeds with his work carefully, step by step, with plans well laid out, with his practical knowledge resting on a firm pathological basis, will only drain in exceptional cases. After opening the abdomen the surgeon frequently has to deal with affections that absolutely call for drainage. There is no other course to pursue. He meets with pathological conditions that can not be successfully removed; he meets with cavities the walls of which it is impossible to extirpate, and consequently he proceeds to establish an abdominal fistula, a great consolation to the operator, because it enables him to do something, so that probably during the course of time Nature will come to his rescue, taking advantage of the temporary drainage, and eventually closing the cavity where drainage was

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established. One of these conditions is met with in a distended or diseased gall bladder. It is my firm conviction that the best success obtained in cases of disease of the gall bladder requiring opening of the organ, in the absence of a permanent occlusion of the common duct, is the establishment of an external fistula. This operation shows the greatest success, is attended by the least danger—in fact, it is almost devoid of danger, if the surgeon is careful to prevent infection of the peritoneal cavity during the operation.

The next condition—one that is not so frequently met with (but there are now some forty or sixty cases on record)—is cyst of the pancreas. A few bold surgeons have made the attempt, and in a few isolated cases have succeeded in extirpating pancreatic cysts with a mortality of more than fifty per cent. Statistics show that the formation of a fistula usually results in a permanent cure in the course of a few weeks, and that a permanent fistula is the exception.

Very often the surgeon makes a mistake in diagnosis, opens the abdomen for a supposed ovarian cyst or an ovarian tumor of some kind, and is astonished, when he has exposed the abdominal organs, to find a retroperitoneal cyst, a hydronephrotic kidney. Many surgeons under such circumstances have resorted to the formation of an abdominal fistula, thus draining the distended pelvis of the kidney—a very unwise procedure, because a lumbar fistula will accomplish the same object, the formation of which is attended by less danger, and eventually, if it should become necessary, a nephrectomy is attended by a great deal of difficulty if previously the organ has been attached to the abdominal wall. So that I should lay down the rule that in hydronephrosis, whether diagnosticated before or during the operation, the surgeon should make a lumbar nephrotomy.

Then comes that large class of pelvic abscesses without removable walls ; abscesses which have had their origin in the pelvic connective tissue, perimetritic abscesses, abscesses originating within the Fallopian tubes, and abscesses within or around the ovary, but in which the careful surgeon will make the most scrutinizing examination before he attempts the work of enucleation. If he finds enucleation impossible it would have been vastly better if he had dealt in a more conservative manner with his patient, and had resorted to abdominal drainage as taught us by Mr. Tait.

In cases of removable affections the surgeon is often forced to drain for two distinct pathological conditions : First, the direct result of the operation—a bleeding, oozing surface ; cases in which it is either impossible to secure the vessels by ligating them, or in which

too much time would be consumed in arresting hæmorrhage. We have learned here the value of the Mikulicz drain. I must, however, take issue with Mikulicz and his immediate followers in the technique of applying his drain. He speaks of an iodoform-gauze drain, and any surgeon who has had considerable experience in abdominal surgery can testify to the fact that where the Mikulicz drain is called for we are frequently dealing with large cavities requiring an enormous amount of gauze to fulfill the urgent indication—to arrest parenchymatous oozing. It is in such cases that I have learned to fear iodoform gauze, because the cases are by no means isolated in which a gauze drain composed exclusively of iodoform gauze became the immediate cause of death from iodoform intoxication. This is particularly liable to occur in cases in which the patients' kidneys are not functionating properly or are diseased. It is in such cases that the elimination of the iodoform is accomplished with great difficulty, and hence when accumulation occurs death follows from intoxication. Again, there are cases that are extremely susceptible to iodoform. The smallest amount of this substance may prove fatal from intoxication. I should therefore, in using the Mikulicz drain as a hæmostatic measure, limit the iodoform gauze to an outer layer or two and pack the interior with ordinary sterilized gauze. This advice I am sure you will all appreciate.

There are likewise abdominal operations during which serious complications arise that may constitute a special indication for drainage. I will only allude to cases of pelvic tumors, of pyosalpinx, of extra-uterine pregnancy, complicated by plastic peritonitis, in which sometimes the anterior rectal wall is torn deep down in the pelvis, not accessible to direct measures, and it is extremely difficult, if not impossible, to close the wound efficiently by suturing. It is in such cases that I protect the abdominal cavity as far as possible by interposing between the wound and abdominal contents a few layers of gauze, then establish tubular drainage in direct connection with the visceral wound. I think that almost every conscientious surgeon will agree with me when I make the statement that in all operations for intraperitoneal suppuration, irrespective of the location of the abscess or the extravasated pus, drainage should be invariably practiced.

Again, in pelvic surgery, where an operation is performed *per vaginam*, the same rules will apply, and it is here that I wish to call particular attention to the intelligent and efficient use of the Mikulicz drain as a hæmostatic agent. I have personal knowledge of three cases of vaginal hysterectomy which resulted fatally, the patients hav-

ing succumbed to the immediate effects of hæmorrhage. In these cases clamps were used, and the clamp either slipped or some important vessels were not included in the branches of the clamp. It is in doubtful cases that the surgeon should make use of the Mikulicz drain as additional security against hæmorrhage after the operation. It is again in pelvic surgery requiring vaginal drainage for abscess that I invariably rely upon the tubular drain. I am sure I will come in conflict with the opinions and teachings of a number of the members present when I take a positive stand in reference to the opening and draining of pelvic abscesses, in which during recent years a number of prominent surgeons, without any hesitation, without any compunction of conscience, added to the necessary incision and tubular drainage the extirpation of perhaps an intact normal uterus, thus combining scientific with mutilating surgery. I think the rule will hold good here as elsewhere that surgeons now as well as in the future must learn that all-important rule—that it is bad surgery to unnecessarily remove an intact healthy organ for the purpose, perhaps, of facilitating drainage that by other methods could have been accomplished equally well. It is in such cases of pelvic abscess of perimetritic origin that careful exploration through the vagina, locating the pus, making, what we have practised for years, an incision resembling a partial separation of the uterus from the surrounding pelvic tissue, an old operation but with new applications. What is the use in the case of single, perhaps large pelvic abscess, unilateral, of adding extirpation of the uterus to the opening up and draining of such an abscess? There are, however, several dangers incident to opening a pelvic abscess through the vaginal roof that we shall learn to appreciate as our experience enlarges, and I believe it is the duty of every member of this Society to be honest in making his reports, to make free confession of his shortcomings, of his mistakes, of his misfortunes, because it is only in that way that we make actual progress. It has happened to me twice, gentlemen, in opening a pelvic abscess through the vaginal roof, to have also opened the bladder—only a temporary evil, it is true, because permanent drainage of the bladder with Sims' catheter succeeded in the course of a few weeks in closing the communication between the bladder and the adjacent abscess, but, after all, a very unpleasant complication for the time being. That I was perhaps not entirely to blame for making such a mistake, you will all understand that in pelvic abscess the mutual relations between the organs often become so seriously changed by antecedent plastic adhesions that the bladder may become displaced to one side or the other in

such a way that it is almost impossible by the best method of operation, based upon anatomical knowledge, to avoid making such mistakes. But I do think that in the future I shall be a little more careful If I have any suspicion whatever of the bladder being in a malposition, I shall locate it accurately by distending it, as a preliminary measure to exploration of the pelvic abscess by means of an exploratory needle, and then opening the abscess with the knife point of a Paquelin cautery. I have operated upon numerous cases of pelvic abscess by a single point of incision and drainage, and have accurate statements from patients months and years after the operation in reference to the permanency of the good results.

A few words in reference to the technique. From a practical standpoint we must divide the technique of drainage, whether *per vaginam* or through the abdominal wall, into three distinct classes—namely, tubular, capillary, and combined drainage. In cases of drainage made for arresting hæmorrhage, as a matter of course we rely upon the gauze tampon. In cases where we expect no serious hæmorrhage, but rather copious serous effusion (the product of the primary wound secretion), I invariably combine tubular with capillary drainage—that is, I take one of Keith's tubular glass drains, pack it lightly with one strip of iodoform gauze, which is an enormous advantage over the older methods of tubular drainage, by removing the fluid from the drain by means of a syringe. In such cases the tube keeps the wound canal wide open, and the gauze drain is sufficient to lead the bloody serum into the hygroscopic dressing. It therefore greatly diminishes the danger from post-operation infective. Drainage by the use of aseptic wicking is only a modification of the ordinary gauze capillary drain. To recapitulate, when I drain for pus, whether through the abdominal or pelvic incision, I invariably resort to tubular drainage, and for the removal of serum combined drainage; while capillary drainage by means of a tampon is reserved for cases in which it becomes necessary to arrest hæmorrhage by this method.

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